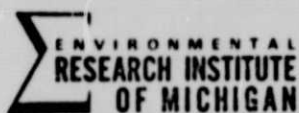


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STUDY OF RECREATIONAL LAND AND OPEN SPACE
USING SKYLAB IMAGERY

Monthly Progress Report, March 1975

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CURRENT ACTIVITY

March activity consisted of preparation for the extraction of signatures from S-192 data covering the Gratiot-Saginaw State Game Area (GSSGA). As mentioned in the previous monthly report, this area is of particular interest to the Wildlife Division of the Michigan Department of Natural Resources (DNR) from the standpoint of providing hunting and other outdoor recreational opportunities to the populace of southern Michigan. Accordingly, this area was chosen for intensive study in demonstrating the utility of S-192 and other types of SKYLAB data for the analysis of recreational sites in southern Michigan.

Specific activities accomplished during this reporting period included the assessment of S-192 data quality, production of photographic enlargements and digital print-out that displayed the GSSGA, and the transfer of a coordinate grid to the digital print-out that will allow for locational reference within the S-192 data. Also, a visit was made to the GSSGA with DNR personnel.

Data quality for the area of the GSSGA was assessed by histogramming the data values in each spectral channel. Results showed some dissimilarities in the ranges of data values for even-numbered and odd-numbered SDO's in most of the doubly sampled spectral channels, the major one being the existence of zero data values in even-numbered SDO's of several spectral channels. In addition, data values in SDO 18 (.46-.51 μ m) were distributed throughout the total range of 0 - 256, perhaps indicating the presence of many bad scan lines. For subsequent data processing, we intend to delete SDO 18 and all even-numbered SDO's of the high sampling density spectral channels.

Digital graymaps of the GSSGA were generated for several SDO's in order to depict many of the major scene classes. We found that the best delineation of the perimeter of the GSSGA was achieved by a simple level

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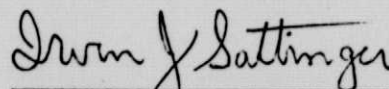
slice of SDO 11 that separated forested areas from the surrounding agricultural fields. This map was subsequently used as a base onto which a one-square-mile section grid was transferred. Section lines were traced from a 1:120,000 color infrared transparency that had been spatially registered to the graymap with the aid of a Bausch and Lomb Zoom Transfer Scope. This section grid will serve as a locational reference in the S-192 data for the location of training sets.

During March, F. Sadowski of ERIM visited the GSSGA with management personnel from the DNR. The purpose of this visit was to continue discussions regarding the management objectives of the area in order to define the types of information needed on the terrain base. Major cover types were identified and located on aerial photos and maps.

FUTURE WORK

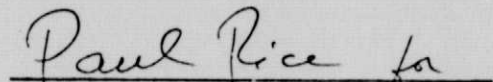
Work during April will involve the extraction and analysis of signatures. Training sets will be identified on aerial photography and transferred to S-192 data with the aid of a zoom transfer scope. For comparison purposes, the same training sets will be identified on ERTS data acquired in June 1973 and the signatures extracted and analyzed.

Respectfully submitted:



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Approved by:


Richard R. Legault
Director - Infrared and Optics
Division

IJS:RRL:d1c